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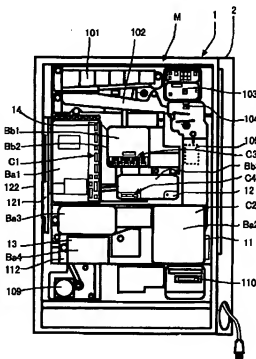
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## (54) 【発明の名称】 遊技機

## (57) 【要約】

【課題】 制御装置の交換に要するコストを低減することができ、検査が容易であり、かつ遊技店における取付が容易な遊技機を提供することを課題とする。

【解決手段】 遊技盤の前面側に設けられた遊技領域に発射された遊技媒体に基づいて所定の入賞状態が発生した場合に、遊技者に利益を与えるように構成された遊技機であって、上記制御装置は、制御内容毎に又は機能毎に個別に形成された複数の制御基板(Ba1~Ba4、Bb1~Bb3)で構成され、上記各制御基板は、上記遊技盤の裏面に取り付けられる第1の基板群(Ba)と、該遊技盤が着脱可能に係合される枠体(112)の裏面側に取り付けられる第2の基板群(Bb)とに区分され、原則として遊技盤に関連する制御を行う基板は遊技盤の裏面に、また遊技盤以外の異機構に関連する制御を行う基板は枠体の裏面に配置されるとともに、遊技盤に関連する制御基板のうち遊技内容を制御する基板は例外として枠体裏面に配置されるようにした。



【特許請求の範囲】

【請求項 1】 遊技盤の前面側に設けられた遊技領域に発射された遊技媒体に基づいて所定の入賞状態が発生した場合に、遊技者に利益を与えるように構成された制御装置を備えた遊技機であって、上記制御装置は、制御内容毎に又は機能毎に個別に形成された複数の制御基板で構成され、上記各制御基板は、上記遊技盤の裏面に取り付けられる第 1 の基板群と、該遊技盤が着脱可能に係合される枠体の裏面側に取り付けられる第 2 の基板群とに区別され、原則として遊技盤に関連する制御を行う基板は遊技盤の裏面に、また遊技盤以外の裏機構に関連する制御を行う基板は枠体の裏面に配置されるとともに、遊技盤に関連する制御基板のうち遊技内容を制御する基板は例外として枠体裏面に配置されることを特徴とする遊技機。

【請求項 2】 上記制御基板は、表示手段を制御すると共に該表示手段に電力を供給する表示制御基板、裝飾部材の発光を制御すると共に該裝飾手段に電力を供給する裝飾制御基板、音出力手段を制御する音制御基板、各種遊技装置の遊技内容を統括的に制御すると共に各種駆動部材に電力を供給する遊技制御基板、入賞に対する配当としての遊技媒体を排出する遊技媒体の排出手段を制御する排出制御基板、遊技媒体の発射手段を制御する発射制御基板、前記各種遊技装置および前記各基板に電力を供給する電源基板とから構成され、

上記遊技盤の裏面に取り付けられる第 1 の基板群は、上記表示制御基板、上記裝飾制御基板および上記音制御基板であり、

上記枠体の裏面側に取り付けられる第 2 の基板群は、上記遊技制御基板、上記排出制御基板、上記発射制御基板および上記電源基板であることを特徴とする請求項 1 記載の遊技機。

【請求項 3】 上記枠体の前面側には、上記遊技盤を後方から取り付ける額縁状の前面枠が一端側に設けられる回転軸を介して開閉可能に設けられており、上記遊技制御基板は、枠体上の前記前面枠の回転軸側とは反対側の位置で、かつ、上記遊技制御基板に設けられる接続端子群が前記枠体の内側に位置するように取り付けられることを特徴とする請求項 1 または請求項 2 に記載の遊技機。

【請求項 4】 上記遊技盤の略中央にあって前面側に臨むように取り付けられる変動入賞装置の裏面と上記遊技盤の裏面側に設けられ入賞した遊技媒体を流下させる入賞遊技媒体誘導部材の裏面に支持させて、上記第 1 の基板群の制御基板の少なくとも一つを取り付けることを特徴とする請求項 1 から請求項 3 の何れかに記載の遊技機。

【請求項 5】 上記遊技盤の略中央にあって前面側に臨むように取り付けられる上記表示手段の裏面または上面に、上記裝飾制御基板と上記音制御基板とを取り付ける

ことを特徴とする請求項 1 から請求項 4 の何れかに記載の遊技機。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 この発明は、遊技盤の前面側に設けられた遊技領域に発射された遊技媒体に基づいて所定の入賞状態が発生した場合に、遊技者に利益を与えるように構成されたパチンコ遊技機等の遊技機に関する。

【0002】

【従来の技術】 従来のパチンコ遊技機に代表される遊技機の制御装置は、主基板、排出制御基板、表示制御基板、発射制御基板および電源基板などの 4、5 種程度の制御基板で構成されることが多かった。

【0003】 この場合に、上記主基板は、遊技盤の前面側に配置される変動入賞装置等の各種遊技装置の駆動制御、遊技盤の前面側に配置される裝飾ランプや LED 等の裝飾装置による裝飾演出の制御、入賞音等の音出力制御、遊技盤に配設された遊技媒体の入賞センサからの信号処理に関する制御等の複数の機能を兼ねるものであった。

【0004】 また、排出制御基板は、入賞に対する賞品としての遊技媒体としての遊技球を排出する排出手段の制御を、表示制御基板は、遊技盤前面に配置された液晶表示装置等の表示制御を、発射制御基板は、遊技媒体としての遊技球を遊技盤の遊技領域内へ発射する発射モータやソレノイドの駆動制御をそれぞれ司り、電源基板は、前記各種遊技装置および前記の各基板に電力を供給する機能を果たすものである。

【0005】

これらの制御基板は、遊技盤の裏面側および遊技盤が着脱可能に係合される枠体の裏面側に配置されていたが、その配置の仕方について必然性および規則性はなく、機種毎に遊技盤の裏側の空いた限られたスペースを利用して、スペースと基板の大きさ等から適宜配置位置を決定しているのが現状である。

【0006】 ここで図 5 を参照して従来の制御装置が設けられるパチンコ遊技機 100 の裏機構について簡単に説明する。

【0007】

図 5 において、パチンコ遊技機 100 における裏機構は、貯留タンク（上タンク）101、誘導路 102、ターミナル基板（外部端子基板）103、半端センサユニット 104、排出ユニット 105、制御基板（主基板）107、排出制御基板 108、発射制御基板 115、表示制御基板 116、役物中継盤 108、発射ユニット 109、カードユニット接続基板 110、電源供給ユニット 111、裏機構盤の枠体 112（裏メカベース）等の構成部材からなっている。

【0008】

上記枠体 112 は、合成樹脂製の一体成型品で形成され、遊技機 100 の前面枠の裏面に固定された金属フレーム 121 に取り付けられている。この枠体

112の上には、排出制御基板106、発射制御基板115の制御装置のほかに、各種の部品、例えば貯留タンク101、誘導路102、ターミナル基板103、半端センサユニット104、排出ユニット105、発射ユニット109、カードユニット接続基板110、電源基板（電源供給ユニット）111などがワンタッチの保持部材等の固定具によって取り付けられている。

【0009】この枠体112に取り付けられた排出制御基板106、発射制御基板115を含む部材は、枠体112に着脱可能に係合された遊技盤Yが交換された後もそのまま活用することができ、遊技店の営業コストの低減を図ることができた。

【0010】一方、主基板107は、遊技盤の裏側に取り付けられており、表示制御基板116は、例えばセンター役物（特別図柄表示装置）の後面に配設されている。そのため、遊技盤が交換される際には、これら主基板107と表示制御基板116も一緒に交換されることとなる。但し、主基板107と表示制御基板116は機種毎に制御内容が異なるそのまゝの状態では新機種で使い回すことができないため、従来においては遊技盤側に

【0011】

【発明が解決しようとする課題】ところが、従来の遊技盤においては、制御装置を構成する基板に関連する幾つかの問題点があった。まず、一つは、上記主基板107が、各種遊技装置の駆動制御、各種装飾装置の制御、入賞音等の音声出力制御、遊技媒体の入賞センサからの信号処理に関する制御等の複数の機能を兼ねていたため、制御装置を集約化できるという利点はあるものの、反面、制御対象が多いため装置が大型になってしまう取り扱いが面倒になるとともに、一つの制御系に故障を生じた場合にも主基板を丸ごと取り換える必要があるため、コスト高となるという不都合がある。

【0012】また、正常に機能する部分があるにも関わらず一部の故障を理由に主基板全体を交換のため廃棄することとなるため、昨今のリサイクル化の推進や産業廃棄物を低減しようという社会の流れにも沿わないという問題がある。

【0013】また、主基板107は上記のように多機能であるため、その機能を実現するために基板上に搭載される電子素子の数も多くなり、主基板自体が大型化する傾向にある。また、制御データも大きくなるため、ROM容量も大きなものが要求されコスト高となる難点もあった。

【0014】また、主基板107は、遊技価値の獲得に重要な関連を有する変動入賞装置等の各種遊技装置の駆動制御等を司っているため、悪意を持った第三者による不正な工作（主基板自体を不正なものにすり替えたり、不正な回路を追加するなど）等を受け易いという問題があり、それらの不正行為を如何にして防止するかが

大きな課題となっている。

【0015】より具体的に、従来において遊技盤1は、製造メーカーの組立工程において上記のような主基板107が予め組み込まれた状態で、遊技店へ向け出荷されていた。ところが、遊技盤の完成後の保管中や輸送中に悪意を持った第三者によって主基板自体が正規品ではないものに交換されたり、不正な信号を発生する回路が付加されたり、あるいは主基板内のデータが改竄されるなどの不正行為が行われた事例が報告されている。これらの不正行為は遊技店や善意の遊技者に不測の不利

【0016】そこで、本発明者等は、製造メーカーから遊技盤を出荷する時点では主基板を遊技盤に取り付けない状態とし、遊技盤が遊技店において上記枠体に係合された後に、遊技盤とは別ルートで厳重に保管されかつ輸送された主基板を遊技店において取付するという不正防止対策を案出した。但し、この不正防止対策を実現するために、遊技盤には遊技店において主基板を容易に取り

【0017】本発明は、上記問題点と課題を解決すべく案出されたものであり、制御装置の交換に要するコストを低減することができ、検査が容易であり、かつ遊技店における取付が容易な遊技機を提供することを目的とする。

【0018】

【課題を解決するための手段】上記目的を達成するため、本発明に係る遊技機は、遊技盤の前面側に設けられた遊技領域に発射された遊技媒体に基づいて所定の入賞

状態が発生した場合に、遊技者に利益を与えるように構成された遊技機であって、上記制御装置は、制御内容毎に又は機能毎に個別に形成された複数の制御基板（Ba1～Ba4、Bb1～Bb3）で構成され、上記各制御基板は、上記遊技盤の裏面に取り付けられる第1の基板群（Ba）と、該遊技盤が着脱可能に係合される枠体（112）の裏面側に取り付けられる第2の基板群（Bb）とに区分され、原則として遊技盤に関連する制御を行う基板は遊技盤の裏面に、また遊技盤以外の裏機枠に関連する制御を行う基板は枠体の裏面に配置されるとともに、遊技盤に関連する制御基板のうち遊技内容を制御する基板は例外として枠体裏側に配置されるようにしたものである。

【0019】これによれば、制御装置は、制御内容毎に又は機能毎に個別に形成された複数の制御基板で構成されるので、制御系に故障や不具合を生じた場合には、該当する制御内容に又は機能に相当する制御基板のみを交換するだけで済むため修理にかかるコストを低減することができる。また、正常に動作している制御基板はそのまま活用することができるので、余計な産業廃棄物を出さない点で環境問題対策に貢献することができ

る。

【0020】また、上記制御基板は、表示手段を制御すると共に該表示手段に電力を供給する表示制御基板、裝飾部材の発光を制御すると共に該裝飾手段に電力を供給する裝飾制御基板、音出力手段を制御する音制御基板、各種遊技装置の遊技内容を統括的に制御すると共に各種駆動部材に電力を供給する遊技制御基板、入賞に対する配当としての遊技媒体を排出する遊技媒体の排出手段を制御する排出制御基板、遊技媒体の発射手段を制御する発射制御基板、前記各種遊技装置および前記各基板に電力を供給する電源基板とから構成され、上記遊技盤の裏面に取り付けられる第1の基板群は、上記表示制御基板、上記裝飾制御基板および上記音制御基板であり、上記枠体の裏面側に取り付けられる第2の基板群は、上記遊技制御基板、上記排出制御基板、上記発射制御基板および上記電源基板とすることにより、遊技盤の交換作業の効率化やリサイクルの推進を図ることができる。

【0021】但し、このように基板を数多くに分割すると特に遊技盤の裏面は取付スペースが狭いため配置スペースの確保および取付けが困難になる。そこで、遊技制御基板を、枠体の裏面側に取り付けるようにすることにより、配置が容易になるとともに、遊技制御基板を遊技盤とは別送するという不正防止対策が採用された場合には、これによって何等手間が増えることはなく、むしろ遊技制御基板を遊技店で簡便に取り付けることができるようになる。つまり、遊技制御基板は遊技内容を制御するので機構変更に伴う遊技盤の交換を考えると遊技盤の裏面に設けておく方がよい。しかし、遊技制御基板を別送した場合には何れにしても店で取り付けることになるので、遊技盤の裏面でも枠体裏面でも手間としては同じになる。

【0022】また、上記枠体の前面側には、上記遊技盤を後方から取り付ける都縁状の前面枠が一端側に設けられる回転軸を介して開閉可能に設けられており、上記遊技制御基板は、枠体上の前記前面枠の回転軸側とは反対側の位置で、かつ、上記遊技制御基板に設けられる接続端子群が前記枠体の内側に位置するように取り付けられるようにするといふ。

【0023】これによれば、遊技制御基板を別送して枠体に取り付けるという不正防止対策が採用された場合にも、遊技機を島設備に取り付けた状態において、前面枠を開放する角度が小さくて済むため、遊技店における遊技制御基板の取付作業を効率良くスムーズに行うことができる。また、上記遊技制御基板に設けられる接続端子群が前記枠体の内側に位置しているので、他の制御基板との距離が比較的遠くなり、配線距離を短くして信頼性を向上させることができる。

【0024】また、上記遊技盤の略中央にあって前面側に臨むように取り付けられる変動入賞装置の裏面と上記遊技盤の裏面側に設けられ入賞した遊技媒体を流下させ

る入賞遊技媒体誘導部材の裏面に支持させて、上記第1の基板群の制御基板の少なくとも一つを取り付けるようにしてもよい。

【0025】これによれば、遊技盤の裏面側の限られたスペースを有効に活用することができる。また、上記制御基板として音制御基板を上述のようにして取り付ける場合には、通常、遊技機裏面において中央部よりやや下方に設けられることが多いスピーカーとの距離が近くなり、配線距離を短くして信頼性を向上させることができる。

【0026】また、上記遊技盤の略中央にあって前面側に臨むように取り付けられる上記表示手段の裏面または上面に、上記裝飾制御基板と上記音制御基板とを取り付けるようにしてもよい。これによれば、遊技盤の裏面側の限られたスペースをより一層有効に活用することができる。

【0027】

【発明の実施の形態】以下に、本発明に係る遊技機の実施形態の一例を図面を参照して説明する。

【0028】図1はパチンコ遊技機の真機模を示す図である。図1において、1はいわゆるCR機と称される遊技機であり、図上、遊技機1の右隅にはカード式球貨機(以下、単に球貨機という)2が併設されている。

【0029】図1において、パチンコ遊技機1における真機模は、貯留タンク(上タンク)101、誘導路102、ターミナル基板(外部端子基板)103、半端センサユニット104、排出ユニット105、主基板(遊技制御基板)Ba1、排出制御基板Ba2、電源基板(電源供給ユニット)Ba3、発射制御基板Ba4、裝飾制御基板Bb1、表示制御基板Bb2、音声制御基板Bb3、発射ユニット109、カードユニット接続基板110、真機模盤の枠体112(裏メカベース)等の構成部材からなっている。

【0030】ここで、裝飾制御基板Bb1、表示制御基板Bb2、音声制御基板Bb3は、遊技盤の裏面に取り付けられる第1の基板群(Bb)であり、遊技盤の交換時には、遊技盤とともに新たなものと交換されるようになっている。

【0031】なお、本実施形態では、表示制御基板Bb2は遊技盤に取り付けられる可変表示装置の裏面に設けられ(図1には現れない)、その上に裝飾制御基板Bb1が重なって設けられる構成となっている。

【0032】また、遊技制御基板Ba1、排出制御基板Ba2、電源基板Ba3、発射制御基板Ba4は、枠体112に取り付けられる第2の基板群(Ba)であり、遊技盤の交換時においても枠体112にそのまま残されて、入れ換えられた新規な遊技盤において活用されるようになっている。但し、主基板(遊技制御基板)Ba1は、後述するように遊技店における取付の利便性から枠体112に取り付けられるようになっている。

【0033】また、本実施形態では、制御基板群 Ba と制御基板群 Bb とを併せて、計 7 個の制御基板 (Ba1 ~ Ba4, Bb1 ~ Bb3) で遊技機 1 の制御全般を司るように構成されている。これらの各制御基板 (Ba1 ~ Ba4, Bb1 ~ Bb3) は、制御内容あるいは機能に基づいて個別の制御基板として構成されたものである。このように制御内容あるいは機能別に制御基板が独立して設けられたことにより、制御部に故障や不具合を生じた場合には、該当する機能を司る制御基板のみを交換するだけで足りるようになる。即ち、例えば表示制御や装飾制御に異常を生じた場合には、従来であれば多数の機能を兼ねる高価な主基板を九つと交換する必要があったが、本実施形態によれば表示制御基板 Bb2 あるいは装飾制御基板 Bb1 だけを交換するだけで済み、修理やメンテナンスにかかるコストを低減することができる。また、故障が生じた部品点数の比較的に少ない制御基板だけを交換することができ、従来のように大多数の部品にわたる無用の多機能の主基板について一部の故障を理由に全体を廃棄しなければならないという事態を回避することができるので、昨今の産業廃棄物を低減したいとの社会の要請にも応えることができる。

【0034】枠体 112 は、合成樹脂製の一体成型品から形成され、遊技機 1 の前面枠の裏面に固定された金属フレーム 121 に取り付けられている。そして、この枠体 112 の上に、上記制御基板群 Ba (主基板(遊技制御基板) Ba1、排出制御基板 Ba2、電源基板(電源供給ユニット) Ba3、発射制御基板 Ba4)、貯留タンク 101、誘導路 102、ターミナル基板 103、半端センサユニット 104、排出ユニット 105、発射ユニット 109、カードユニット接続基板 110、などが、ワンタッチの保持部材等の固定具によって取り付けられて、いわゆる真機筐体 M を構成している。

【0035】金属フレーム 121 は矩形をなし、遊技盤を着脱可能に収納固定する遊技盤収納部 122 が形成されている。遊技盤収納部 122 には図示省略した複数の遊技盤固定器具が配置され、それらの複数の遊技盤固定器具によって遊技盤を固定するようになっている。

【0036】貯留タンク 101 は排出される前の球を予め貯留しておくもので、この貯留タンク 101 の球数の不足は補給センサ (図示省略) によって検出され、不足のときは島設備から球が供給される。貯留タンク 101 内の球は誘導路 102 により誘導され、排出ユニット 105 によって排出される。

【0037】排出ユニット 105 は所定の球排出指令信号 (排出制御基板 Ba2 からの信号) に基づいて貯留タンク 101 より案内される遊技球を遊技者側へ所要数排出 (ここの排出には、賞球排出および球貸し排出が含まれる) する機能を有し、球排出機構を備えた排出装置を構成する。なお、排出ユニット 105 は二条の球排出通路 (図示省略) を有しており、賞球用の排出と球貸し

用の排出を兼ねるようになっている。また、賞球用の排出は、遊技において発生した遊技球を遊技者に供給することに相当する。

【0038】誘導路 102 に賞球排出および球貸し排出のための球が有るかどうかは、半端センサユニット 104 によってそれぞれ検出される。ターミナル基板 103 は AC 電源の入力や遊技店のホールコンピュータ (管理装置: 図示省略) との間における信号の授受などについての中継を行うもので、リレー部およびコネクタ部 (ホールコンピュータとの接続を行う) に区分されており、両者はケーブルによって接続されている。

【0039】ここで、主基板 (遊技制御基板) Ba1 は、枠体 112 に取り付けられる制御基板群 Bb に属し、遊技盤で実行される役物遊技に必要な各種制御を行うもので、所定の透明ケース 10 内に収納されて遊技制御装置を構成している。遊技制御基板 Ba1 には、データや信号の入出力を行う接続端子群 C1 が形成されており、その接続端子群 C1 は、遊技制御基板 Ba1 を枠体 112 に取り付けただけに、図上遊技制御基板 Ba1 の右端側に位置するように設けられている。これにより、他の機器の接続端子群 (後述の C2 ~ C4) との位置関係に基づいて、接続する際のケーブル (図示省略) の長さを短くすることができる。

【0040】ところで、この主基板 (遊技制御基板) Ba1 を枠体 112 に取り付けられる構成としたのは、遊技制御基板 Ba1 の取付作業を遊技店において容易に行うことができるようにしたいとの要請に基づくものである。

【0041】遊技制御基板 Ba1 は、遊技盤毎に制御内容が異なるため、遊技盤が交換されると新たなものに入れ換えられることが普通である。したがって、敢えて枠体 112 に取り付けられべき極端的理由はなく、却って遊技盤側に取り付けられて遊技盤ごと交換できるようにした方が便利であった。

【0042】ところが、先にも述べたように、遊技制御基板 Ba1 は、遊技価値の獲得に重要な関連を有する入賞装置等の各種遊技装置の駆動制御等を行っているため、悪意を持った第三者による不正な工作等を受易いという問題があり、その不正行為を防止するために、製造メーカーから遊技盤 1 を出荷する時点では遊技制御基板 Ba1 を遊技盤 1 に取り付けない状態とし、遊技盤 1 が遊技店において枠体 112 に係合された後に、遊技盤 1 とは別ルートで厳重に保管されかつ輸送された遊技制御基板 Ba1 を遊技店において取付けるようにするという不正防止対策が提案されている。この提案を実現するためには、遊技店において別送されて来た遊技制御基板 Ba1 を遊技店の店員等が容易に取り付けられる構成とすることが望まれる。これに対応するために、本実施形態では、枠体 112 の左上側の所定位置に遊技制御基板 Ba1 の取付スペースを確保し、その位置に遊技制御基板 Ba1 をワンタッチの保持部材等の固定具によって簡

便に取り付けることができる構成としている。したがって、上述のように遊技制御基板Ba1を遊技盤とは別送するという不正防止対策が採用された場合にも即応することができる。

【0043】排出制御基板Ba2は、制御基板群Baに属して枠体112に取り付けられ、球の排出に必要な各種電気部品（例えば、排出ユニット105の電氣的駆動源）の制御を行うものであり、所定の透明なケース11内に収納されて排出制御装置を構成している。なお、排出制御基板Ba2には、データや信号の入出力を行う接続端子群C2が形成されており、その接続端子群C2は、排出制御基板Ba1を枠体112に取り付けた際に、図上排出制御基板Ba2の上端側に位置するように設けられている。これにより、他の機器の接続端子群（C1、C3、C4）との位置関係に基づいて、接続する際のケーブル（図示省略）の長さを短くすることができる。

【0044】この排出制御基板Ba2は、遊技制御基板Ba1から送信された賞球データ（賞球数情報）に基づき、排出センサからの検出信号に基づいて排出ソレノイドへの通電を制御し、所定数の遊技球を排出させる制御を行う。また、排出制御基板Ba2は球貸機2（いわゆるCRサントユニット）との間で信号の授受を行いながら、球貸しに伴う制御を行う。すなわち、球貸機2から球貸し準備完了を示すBRD信号（図2参照）をパチンコ遊技機1側の排出制御基板Ba2で受信し、パチンコ遊技機1側の準備完了を示すPRDY信号（図2参照）を球貸機2側で受信することにより、球貸機2を含めた球貸し制御が可能になる。また、球貸機2から排出制御基板Ba2に球を貸し出すことを要求するBRD信号（図2参照）を送信し、その信号の受信に基づき排出制御基板Ba2で貸球排出を行い、貸球排出が終了したことに基づきEXS信号（図2参照）を球貸機2側へ送信することにより一連の球貸し制御が可能になる。

【0045】電源基板（電源供給ユニット）Ba3は、制御基板群Baに属して枠体112に取り付けられ、制御基板群Ba（主基板（遊技制御基板）Ba1、排出制御基板Ba2、発射制御基板Ba4）、制御基板群Bb（裝飾制御基板Bb1、表示制御基板Bb2、音声制御基板Bb3）の各制御基板に電力を供給するものである。ここで、図2の電力供給システムを示すブロック図を参照して電力の供給系統の詳細を説明する。

【0046】図2において、パチンコ遊技機1には外部からAC24Vの電力が供給されるようになっており、外部電源であるAC24Vはターミナル基板（外部ターミナル）103を介して間接的に電源基板（電源供給ユニット）Ba3に分配される。

【0047】電源基板Ba3はAC24Vを直流に変換し、各種のDC電圧を生成して各制御装置に供給するようになっている。具体的には、ソレノイド駆動用のDC

30V、ランプ類駆動用のDC24V、センサ駆動用およびバックライト駆動用のDC12Vを駆動用電源として生成するとともに、各制御装置を動作させるための制御基板用電源としてDC12Vを生成する。

【0048】そして、DC30VおよびDC12Vを発射制御基板Ba4に、DC24VおよびDC12Vを排出制御基板Ba2に、DC32V、DC24VおよびDC12Vを遊技制御基板Ba1に、DC12Vを音制御基板Bb3に、DC30V、DC24VおよびDC12Vを裝飾制御基板Bb1に、DC12Vを表示制御基板Bb2に供給するようになっている。したがって、遊技制御基板Ba1および排出制御基板Ba2は、これら装置内で使用するための電源を別途構成した電源基板Ba3から供給される構成となっており、電源基板Ba3はパチンコ遊技機1の外部から電力（AC24V）の供給を受けて、所要の電圧を生成して排出制御基板Ba2に供給する構成となっている。

【0049】発射制御基板Ba4は、制御基板群Baに属して枠体112に取り付けられ、球の発射に必要な各種電気部品（例えば、発射ユニット109の電氣的駆動源）の制御を行うもので、所定の透明なケース13内に収納されて発射制御装置を構成している。発射制御基板Ba4は、発射操作ノブの回転量に応じて発射ユニット109（発射装置）を制御し、回転量に応じた強さで遊技球を発射させる制御を行うようになっている。

【0050】裝飾制御基板Bb1は、遊技盤の裏面に取り付けられる制御基板群Bbに属し、後述の表示制御基板Bb2の裏側に重ねて設けられている。この裝飾制御基板Bb1は、遊技機1の前面側に配設された裝飾用ランプ類の作動（点灯又は消灯）を制御するものであり、所定の透明なケース14内に収納されて裝飾制御装置を構成している。裝飾制御基板Bb1は、遊技制御基板Ba1から送信された裝飾データに基づき、サイドランプ等の発光を制御するとともに、これらの発光裝飾部材に電源を供給している。なお、裝飾制御基板Bb1には、データや信号の入出力を行う接続端子群C3が形成されており、その接続端子群C3は、裝飾制御基板Bb1を遊技盤の裏面側に取り付け付けた際に、図上裝飾制御基板Bb1の下端側に位置するように設けられている。これにより、他の機器の接続端子群（C1、C2、C4）との位置関係に基づいて、接続する際のケーブル（図示省略）の長さを短くすることができる。

【0051】表示制御基板Bb2は、制御基板群Bbに属して遊技盤の裏面側（本実施形態では、特別図柄表示装置の裏面側）に取り付けられている（なお、表示制御基板Bb2の上記裝飾制御基板Bb1が重なった状態で取り付けられているため表示制御基板Bb2自体は図1上には現れない）。この表示制御基板Bb2は、遊技制御基板Ba1から出力される指令などに従ってセンタ役物を制御し、センタ役物の前面の表示部（例え

ば特別図柄表示装置の表示部)に所定の画像を表示させるもので、所定の透明ケース(図上は現れない)内に収納されて表示制御装置を構成している。

【0052】表示制御基板Bb2は、遊技制御基板Ba1から送信された表示データに基づき、特別図柄表示装置の画像表示を制御するとともに、特別図柄表示装置に対して電源を供給している。

【0053】音制御基板Bb3は、制御基板群Bbに属して遊技盤の裏面側に取り付けられている。この音制御基板Bb3は、遊技機1の前面等に配設されたスピーカより、遊技状態に応じて各種効果音を適宜出力する制御を行うものであり、所定の透明ケース12内に収納されて音制御装置を構成している。なお、音制御基板Bb3は、遊技制御基板Ba1とケーブル接続されて、遊技状態を示す信号などの授受が行われるようになっている。

音制御基板Bb3は、遊技制御基板Ba1から送信された音データに基づき効果音を生産する等の効果音に関する制御を行っている。また、音制御基板Bb3には、データや信号の入出力を行う接続端子群C4が形成されており、その接続端子群C4は、音制御基板Bb3を枠体112に取り付けた際に、図上音制御基板Bb3の左下側に位置するように設けられている。これにより、他の機器の接続端子群(C1~C3)との位置関係に基づいて、接続する際のケーブル(図示省略)の長さを短くすることができる。

【0054】発射ユニット109は、遊技機1の前面下部に設けられた発射操作ノブの操作に応じて、球を発射するための機構である。カードユニット接続基板110は球貸機2から延出されるケーブル(図示せず)を遊技機1に接続するためのもので、ケーブルの端部に設けられるコネクタを受ける装着部材(例えば、メス型のコネクタ)を備えている。

【0055】以上述べたように、本実施形態によれば、制御装置が、制御基板群Baと制御基板群Bbとを併せた計7個の制御基板(Ba1~Ba4、Bb1~Bb3)で遊技機1の制御全般を司るように構成されているので、制御系に故障や不具合を生じた場合には、該当する機能を司る制御基板のみを交換するだけで済み、メンテナンスにかかるコストを低減することができる。

【0056】また、故障が生じた制御基板だけを交換することができ、従来のように多機能の主基板について一部の故障を理由に全体を廃棄しなければならない事態を回避することができ、部品のリサイクル化推進の要請や、産業廃棄物を低減したいという環境問題対策にも応えることができる。

【0057】また、制御装置が制御内容や機能別に個々独立した制御基板(Ba1~Ba4、Bb1~Bb3)で構成されているため、回路構成や制御内容を把握し易くされており、各制御基板について遊技店や特定検査機関で検査を行う際に、その解析等を短時間で効率良く行

うことができる。

【0058】また、各制御基板(特に、遊技制御基板Ba1、排出制御基板Ba2、裝飾制御基板Bb1、音制御基板Bb3)は、各制御基板に設けられる接続端子群(C1~C4)に接続される配線ケーブルの長さが最短となる向き(取付位置)で取り付けられているため、全体的に配線ケーブルの長さを短くすることができ、限られた空間における配線スペースを有効に利用することができるとともに、配線ケーブルの端みが少なくなるため断線の起こる確率を下げ信頼性を高めることができる。

【0059】また、遊技制御基板Ba1については、枠体112の左上側の所定位置に遊技制御基板Ba1の取付スペースを確保し、その位置に遊技制御基板Ba1をワンタッチの保持部材等の固定具によって簡便に取り付けることができる構成になっているので、遊技制御基板Ba1を遊技盤とは別送するという不正防止対策が採用された場合にも即時対応することができ。

【0060】なお、上記実施形態では、表示制御基板Bb2の上に裝飾制御基板Bb1を重ねた状態で可変表示装置の裏側に取り付け、その下方に音制御基板Bb3を設ける場合について説明したが、表示制御基板Bb2、裝飾制御基板Bb1、音制御基板Bb3等の取付方はこれに限定されるものではない。

【0061】ここで、図3、図4を参照して表示制御基板Bb2、裝飾制御基板Bb1、音制御基板Bb3等の他の取付例を説明する。

【0062】図3に示す遊技盤の背面の分解斜視図は、遊技盤Yの背面に取付ベース200を介して取り付けられる可変表示装置201の裏面201aに、裝飾制御基板Bb1と音制御基板Bb3とを並列状態で取り付けるようにしたものである。これによれば、遊技盤Yの限られたスペースをより有効に活用することができる。

【0063】また、図4の遊技盤の背面の斜視図にあるように、変動入賞装置(所謂アタッカー(図示せず)の裏面と遊技盤Yの裏面に設けられ入賞した遊技球を流下させる入賞遊技媒体誘導部材(所謂球寄せ)202の裏面に係合部202aとボス203を介して音制御基板Bb3を設けるようにしてもよい(例えば、球寄せ203の係合部202aに、音制御基板Bb3を覆う透明ケース204の端部に形成した係合片204aを係合させて、透明ケース204の他側面に形成したビス止め部介して上記ボス203にビス止める。)。この場合には遊技盤Yの限られたスペースを有効に活用することができると共に、通常の遊技機において遊技盤よりやや下方に設けられることが多いスピーカ(図示せず)との距離が近くなり、配線距離を短くして信頼性を向上させることができる。

【0064】なお、本実施形態において適用される遊技機は、第2種(いわゆる羽根物タイプ)のパチンコ遊技

機に限らず、第1種（いわゆるセブン機タイプ）や第3種（いわゆる権利物タイプ）のパチンコ遊技機、アレンジボール遊技機等の他の弾球遊技機であってもよい。

【0065】また、本実施形態では、制御装置を7つの制御基板（Ba1～Ba4、Bb1～Bb3）で構成する場合について説明したが、制御内容や機能に基づいて制御基板の数を適宜増減できることは勿論である。

【0066】

【発明の効果】以上述べたように、本発明に係る遊技機によれば、遊技盤の前面側に設けられた遊技領域に発射された遊技媒体に基づいて所定の入賞状態が発生した場合に、遊技者に利益を与えるように構成された遊技機であって、上記制御装置は、制御内容毎に又は機能毎に個別に形成された複数の制御基板で構成され、上記各制御基板は、上記遊技盤の裏面に取り付けられる第1の基板群と、該遊技盤が着脱可能に係合される枠体の裏面に取り付けられる第2の基板群とに区分され、原則として遊技盤に関連する制御を行う基板は遊技盤の裏面に、また遊技盤以外の裏機構に関連する制御を行う基板は枠体の裏面に配置されるとともに、遊技盤に関連する制御基板のうち遊技内容を制御する基板は例外として枠体裏面に配置されるようにしたので、制御系に故障や不具合を生じた場合には、該当する制御内容又は機能を相当する制御基板のみを交換するだけで済むため修理にかかるコストを低減することができるという効果がある。また、正常に動作している制御基板はそのまま活用することができるので、余計な産業廃棄物を出さない点で環境問題対策に貢献することができるという効果がある。

【0067】また、上記制御基板は、表示手段を制御すると共に該表示手段に電力を供給する表示制御基板、装飾部材の発光を制御すると共に該装飾手段に電力を供給する装飾制御基板、音出力手段を制御する音制御基板、各種遊技装置の遊技内容を統括的に制御すると共に各種駆動部材に電力を供給する遊技制御基板、入賞に対する配当としての遊技媒体を排出する遊技媒体の排出手段を制御する排出制御基板、遊技媒体の発射手段を制御する発射制御基板、前記各種遊技装置および前記各基板に電力を供給する電源基板とから構成され、上記遊技盤の裏面に取り付けられる第1の基板群は、上記表示制御基板、上記装飾制御基板および上記音制御基板であり、上記枠体の裏面に取り付けられる第2の基板群は、上記遊技制御基板、上記排出制御基板、上記発射制御基板および上記電源基板とすることにより、遊技盤の交換作業の効率化やリサイクルの推進を図ることができるという効果がある。

【0068】また、上記枠体の前面側には、上記遊技盤を後方から取り付ける額縁状の前面枠が一端側に設けられる回転軸を介して開閉可能に設けられており、上記遊技制御基板は、枠体上の前記前面枠の回転軸側とは反対側の位置で、かつ、上記遊技制御基板に設けられる接続

端子群が前記枠体の内側に位置するように取り付けられるようにする場合には、遊技制御基板を別途して枠体に取り付けるといった不正防止対策が採用された場合にも、遊技機を島設備に取り付けた状態において、前面枠を開放する角度が小さく済むため、遊技店における遊技制御基板の取付作業を効率良くスムーズに行うことができるという効果がある。また、上記遊技制御基板に設けられる接続端子群が前記枠体の内側に位置しているため、他の制御基板との距離が比較的近くなり、配線距離を短くして信頼性を向上させることができるという効果もある。

【0069】また、上記遊技盤の略中央にあって前面側に臨むように取り付けられる変動入賞装置の裏面と上記遊技盤の裏面に設けられ入賞した遊技媒体を流下させる入賞遊技媒体誘導部材の裏面に支持させて、上記第1の基板群の制御基板の少なくとも一つを取り付けるようにする場合には、遊技盤の裏面側の限られたスペースを有効に活用することができるという効果がある。

【0070】また、上記遊技盤の略中央にあって前面側に臨むように取り付けられる上記表示手段の裏面または上面に、上記装飾制御基板と上記音制御基板とを取り付けるようにする場合には、遊技盤の裏面側の限られたスペースをより一層有効に活用することができるという効果がある。

【図面の簡単な説明】

【図1】本発明の実施形態としてのパチンコ遊技機の裏機構の構成を示す正面図である。

【図2】本発明の実施形態としてのパチンコ遊技機の制御基板の電力供給系統を示すブロック図である。

【図3】遊技盤の背面構成例を示す分解斜視図である。

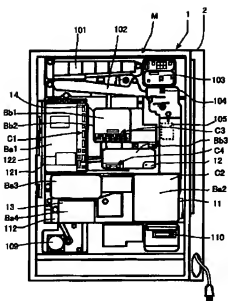
【図4】遊技盤の他の背面構成例を示す斜視図である。

【図5】従来のパチンコ遊技機の裏機構の構成を示す正面図である。

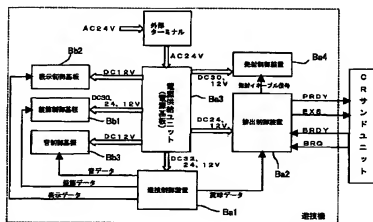
【符号の説明】

- 1 遊技機（パチンコ遊技機）
- 2 カード式球貸機（CRサンドユニット）
- Ba 第2の基板群
- Ba1 主基板（遊技制御基板）
- Ba2 排出制御基板
- 40 Ba3 電源基板（電源ユニット）
- Ba4 発射制御基板
- Bb 第1の基板群
- Bb1 装飾制御基板
- Bb2 表示制御基板
- Bb3 音声制御基板
- C1～C4 接続端子群
- M 裏機構盤
- 109 発射ユニット
- 112 枠体
- 50 121 金属フレーム

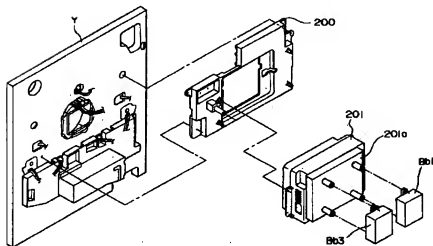




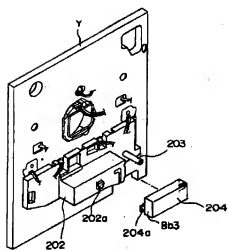
【圖2】



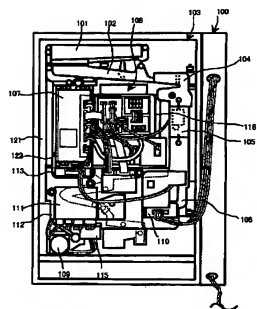
【圖3】



【図 4】



【図 5】



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**Bibliography**

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[FI]

A63F 7/02 326 Z

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[Theme code (reference)]

2C088

[F term (reference)]

2C088 BC45 EA05

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**Summary**

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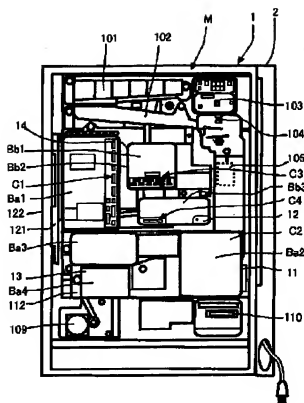
**(57) [Abstract]**

[Technical problem] Let it be a technical problem to offer a game machine with an inspection to be able to reduce the cost which exchange of a control unit takes and easy and, and the easy attachment in a game store.

[Means for Solution] When a predetermined winning-a-prize state occurs based on the game medium discharged by the game field established in the front-face side of the game board, give a game person profits. It is the constituted game machine. the above-mentioned control unit Or it consists of two or more control boards (Ba1-Ba4, Bb1-Bb3) individually formed for every function. every contents of control -- each above-mentioned control board It is classified into the 1st substrate group (Ba) attached in the rear face of the above-mentioned game board, and the 2nd substrate group (Bb) attached in the rear-face side of the frame (112) with which this game board is engaged removable. While the substrate to which the substrate which performs control relevant to the game board in principle performs control relevant to back mechanisms other than the game board at the rear face of the game board again had been arranged at the rear face of a frame, the substrate which controls the contents of a game among the control boards relevant to the game board was arranged as an exception at the frame background.

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CLAIMS

[Claim(s)]

[Claim 1] When a predetermined winning-a-prize state occurs based on the game medium discharged by the game field established in the front-face side of the game board It is the game machine equipped with the control unit constituted so that profits might be given to a game person. the above-mentioned control unit Or it consists of two or more control boards individually formed for every function. every contents of control — each above-mentioned control board It is classified into the

1st substrate group attached in the rear face of the above-mentioned game board, and the 2nd substrate group attached in the rear-face side of the frame with which this game board is engaged removable. While the substrate to which the substrate which performs control relevant to the game board in principle performs control relevant to back mechanisms other than the game board at the rear face of the game board again is arranged at the rear face of a frame The substrate which controls the contents of a game among the control boards relevant to the game board is a game machine characterized by being arranged as an exception at a frame background.

[Claim 2] The above-mentioned control board the display-control substrate which supplies power to this display means while controlling a display means, and an ornament, while controlling luminescence of a member While controlling in generalization the contents of a game of the ornament control board which supplies power to this ornament means, the sound control board which controls a sound output means, and various game equipments It consists of power supply substrates which supply power to the game control board which supplies power to various driving member, the emission-control substrate which controls the discharge means of the game medium which discharges the game medium as a dividend to winning a prize, the discharge control board which controls the discharge means of a game medium, the various aforementioned game equipments, and each aforementioned substrate. The 1st substrate group attached in the rear face of the above-mentioned game board The 2nd substrate group which is the above-mentioned display-control substrate, the above-mentioned ornament control board, and the above-mentioned sound control board, and is attached in the rear-face side of the above-mentioned frame is a game machine according to claim 1 characterized by being the above-mentioned game control board, the above-mentioned emission-control substrate, the above-mentioned discharge control board, and the above-mentioned power supply substrate.

[Claim 3] It is the game machine according to claim 1 or 2 characterized by to be attached so that the connection terminal block by which the front frame of the shape of a frame which attaches the above-mentioned game board from back is prepared in the front-face side of the above-mentioned frame possible [ opening and closing ] through the rotation shaft prepared in an end side, the rotation shaft side of the aforementioned front frame on a frame is the position of an opposite side, and the above-mentioned game control board is prepared in the above-mentioned game control board may be located inside the aforementioned frame.

[Claim 4] A game machine given in any of a claim 1 to the claim 3 characterized by making the rear face of the winning-a-prize game medium flare-part material which makes it flow down the game medium which was formed in the rear-face [ of the change winning-a-prize equipment attached so that it may be in the center of abbreviation of the above-mentioned game board and a front-face side may be attended ], and rear-face side of the above-mentioned game board, and won a prize

support, and attaching at least one of the control boards of the substrate group of the above 1st they

[Claim 5] A game machine given in any of a claim 1 to the claim 4 characterized by attaching the above-mentioned ornament control board and the above-mentioned sound control board in the rear face or the upper surface of the above-mentioned display means attached so that it may be in the center of abbreviation of the above-mentioned game board and a front-face side may be attended they are.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to game machines, such as a pachinko game machine constituted so that profits might be given to a game person, when a predetermined winning-a-prize state occurs based on the game medium discharged by the game field established in the front-face side of the game board.

[0002]

[Description of the Prior Art] The control unit of the game machine represented by the conventional pachinko game machine consisted of 4 or about 5 kinds of control boards, the main substrate, an emission-control substrate, a display-control substrate, a discharge control board, a power supply substrate, etc., in many cases.

[0003] In this case, the above-mentioned main substrate was what serves as two or more functions, such as voice output control of control of the ornament production by ornament equipments arranged at the various game equipments, such as change winning-a-prize equipment arranged at front-face side of the game board, drive control-, and front-face side of the game board, such as an ornament lamp and Light Emitting Diode, winning-a-prize sound, etc., and control about signal processing from the winning-a-prize sensor of the game medium arranged in the

game board.

[0004] An emission-control substrate control of an eccrisis means to discharge the game sphere as a game medium as a prize to winning a prize moreover, a display-control substrate Display controls, such as a liquid crystal display arranged in the front face of the game board, a discharge control board Managing the drive control of a discharge motor or a solenoid which discharges the game sphere as a game medium into the game field of the game board, respectively, a power supply substrate achieves the function which supplies power to the various aforementioned game equipments and each aforementioned substrate.

[0005] Although these control boards are arranged at the rear-face side of the frame with which the rear-face side of the game board and the game board are engaged removable, the present condition is having determined the arrangement position suitably from the size of a space and a substrate etc. using the limited space as for which does not have necessity and regularity about the method of the arrangement, and the background of the game board was vacant for every model.

[0006] The back mechanism of the pachinko game machine 100 in which the conventional control unit is formed with reference to drawing 5 here is explained briefly.

[0007] In drawing 5, the back mechanism in the pachinko game machine 100 The reservoir tank (upper tank) 101, TWY 102, the terminal substrate (external terminal substrate) 103, the odd sensor unit 104, the eccrisis unit 105, a control board (the main substrate 107, the emission-control substrate 106, the discharge control board 115, display-control substrate 116). It consists of composition members, such as the frame 112 (back mechanism base) of the accessory relay base 108, the discharge unit 109, the card unit connection substrate 110, the current supply unit 111, and the back mechanism board.

[0008] The above-mentioned frame 112 is formed with the one cast made of synthetic resin, and is attached in the metal frame 121 fixed to the background of the front frame of the game machine 100. On this frame 112, various kinds of parts 101, for example, a reservoir tank, TWY 102, the terminal base 103, the odd sensor unit 104, the eccrisis unit 105, the discharge unit 109, the card unit connection substrate 110, the power supply substrate (current supply unit) 111, etc. are attached by fasteners, such as an attachment component of one-touch, besides the control unit of the emission-control substrate 106 and the discharge control board 115.

[0009] After being exchanged for the frame 112 in the game board Y engaged removable, it could utilize as it is, and the member containing the emission-control substrate 106 attached in this frame 112 and the discharge control board 115 was able to aim at reduction of the operating cost of a game store.

[0010] On the other hand, the main substrate 107 is attached in the background of the game board, and the display-control substrate 116 is arranged in the posterior part of for example, a pin center, large accessory (specially pattern display).



Therefore, in case it is exchanged in the game board, these main substrates 107 and the display-control substrate 116 will also be exchanged together. However, since the contents of control differed for every model and a new model was not able to use about the main substrate 107 and the display-control substrate 116 in the state as it is, they were attached in the game board side in the former.

[0011]

[Problem(s) to be Solved by the Invention] However, in the conventional game machine, there were some troubles relevant to the substrate which constitutes a control unit. First, since one served as two or more functions, such as control concerning [ the above-mentioned main substrate 107 ] voice output control of drive control of various game equipments, control of various ornament equipments, winning-a-prize sound, etc., and signal processing from the winning-a-prize sensor of a game medium Having un-arranged [ of becoming cost quantity ], since the advantage that-izing of the control unit can be carried out [ \*\*\*\* ] needs to exchange the main substrate the whole round head when failure is produced in one control system on the other hand while equipment became large-sized and handling became troublesome, since [ of a certain thing ] there are many controlled systems.

[0012] Moreover, although there is a portion which functions normally, in order to discard for reasons of a part of failures for exchange of the whole main substrate, there is a problem that the flow of the society that promotion and industrial waste of recycling-izing of these days will be reduced is not met, either.

[0013] Moreover, since the main substrate 107 is various functions as mentioned above, in order to realize the function, its number of the electronic devices carried on a substrate also increases, and it is in the inclination which the main substrate itself enlarges. Moreover, there were control data and a difficulty that a big thing is required and ROM capacity also serves as cost quantity since it becomes large.

[0014] Moreover, the main substrate 107 has the problem of being easy to receive unjust machining (to substitute the main substrate itself for an irregular thing secretly, or for an inaccurate circuit to be added) by the third person with malice etc. since drive control of various game equipments, such as change winning-a-prize equipment which has relation important for acquisition of game value, etc. is managed, and it has been a big technical problem how those malfeasances are prevented.

[0015] More specifically, in the former, the game board 1 is in the state where set like a manufacture maker's erector and the above main substrates 107 were incorporated beforehand, and was shipped towards the game store. However, the circuit which generates a signal unjust in being exchanged for that whose main substrate itself is not a regular article by the third person who had malice during the storage after completion of the game board and transportation is added, or the example to which the malfeasance of the data in the main substrate being altered was performed is reported. These malfeasances have a high possibility of giving the game person of a game store or goodwill unexpected disadvantageous profit, and

need to be prevented certainly.

[0016] Then, this invention person etc. thought out inaccurate preventive measures called \*\*\*\*\* in the main substrate which was kept severely and conveyed by another root in the game store with the game board, after it considered as the state where the main substrate is not attached in the game board and the game board engaged with the above-mentioned frame in the game store, when shipping the game board from the manufacture maker. However, in order to realize this inaccurate preventive-measures proposal, the composition which can attach the main substrate easily in a game store is required of the game board.

[0017] this invention is thought out that the above-mentioned trouble and a technical problem should be solved, can reduce the cost which exchange of a control unit takes, and aims at offering a game machine with an easy and inspection and the easy attachment in a game store.

[0018]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the game machine concerning this invention When a predetermined winning-a-prize state occurs based on the game medium discharged by the game field established in the front-face side of the game board It is the game machine constituted so that profits might be given to a game person. the above-mentioned control unit Or it consists of two or more control boards (Ba1-Ba4, Bb1-Bb3) individually formed for every function. every contents of control -- each above-mentioned control board It is classified into the 1st substrate group (Ba) attached in the rear face of the above-mentioned game board, and the 2nd substrate group (Bb) attached in the rear-face side of the frame (112) with which this game board is engaged removable. While the substrate to which the substrate which performs control relevant to the game board in principle performs control relevant to back mechanisms other than the game board at the rear face of the game board again is arranged at the rear face of a frame The substrate which controls the contents of a game among the control boards relevant to the game board is arranged as an exception at a frame background.

[0019] according to this -- a control unit -- every contents of control -- or the contents of control which correspond when failure and fault are produced in a control system, since it consisted of two or more control boards individually formed for every function -- or since what is necessary is to exchange only the control board equivalent to a function, the cost concerning repair can be reduced Moreover, since the control board which is operating normally is utilizable as it is, it can contribute to the cure against an environmental problem in that excessive industrial waste is not taken out.

[0020] Moreover, the above-mentioned control board the display-control substrate which supplies power to this display means while controlling a display means, and an ornament, while controlling luminescence of a member While controlling in generalization the contents of a game of the ornament control board which supplies

power to this ornament means, the sound control board which controls a sound output means, and various game equipments It consists of power supply substrates which supply power to the game control board which supplies power to various driving member, the emission-control substrate which controls the discharge means of the game medium which discharges the game medium as a dividend to winning a prize, the discharge control board which controls the discharge means of a game medium, the various aforementioned game equipments, and each aforementioned substrate. The 1st substrate group attached in the rear face of the above-mentioned game board The 2nd substrate group which is the above-mentioned display-control substrate, the above-mentioned ornament control board, and the above-mentioned sound control board, and is attached in the rear-face side of the above-mentioned frame The increase in efficiency of exchange work of the game board and promotion of recycling can be aimed at by considering as the above-mentioned game control board, the above-mentioned emission-control substrate, the above-mentioned discharge control board, and the above-mentioned power supply substrate.

[0021] however, if many substrates are boiled and divided in this way, since especially the rear face of the game board has the narrow attachment space, reservation and anchoring of an arrangement space will become difficulty Then, while arrangement became easy by attaching a game control board in the rear-face side of a frame, when the inaccurate preventive measures of sending a game control board by separate post with the game board are adopted, time and effort cannot increase at all by this, and a game control board can be attached simple rather in a game store. That is, it is better to prepare in the rear face of the game board, if conversion of the game board accompanying model change is considered, since a game control board controls the contents of a game. However, since it will attach anyway in a store when a game control board is sent by separate post, as time and effort, it becomes the same also with the rear face of the game board, or the frame rear face.

[0022] Moreover, the front frame of the shape of a frame which attaches the above-mentioned game board from back is prepared in the front-face side of the above-mentioned frame possible [ opening and closing ] through the rotation shaft prepared in an end side, and, as for the above-mentioned game control board, it is good to make it attached so that the connection terminal block which the rotation shaft side of the aforementioned front frame on a frame is the position of an opposite side, and is prepared in the above-mentioned game control board may be located inside the aforementioned frame.

[0023] Since the angle which opens a front frame is small and ends in the state where the game machine was attached in the island facility when the inaccurate preventive measures of sending a game control board by separate post, and attaching in a frame are adopted according to this, attachment of the game control board in a game store can be performed smoothly efficiently. Moreover, since the

connection terminal block prepared in the above-mentioned game control board is located inside the aforementioned frame, distance with other control boards can become comparatively near, wiring distance can be shortened, and reliability etc. can be raised.

[0024] Moreover, the rear face of the winning-a-prize game medium flare-part material which makes it flow down the game medium which was formed in the rear-face [ of the change winning-a-prize equipment attached so that it may be in the center of abbreviation of the above-mentioned game board and a front-face side may be attended ], and rear-face side of the above-mentioned game board, and won a prize is made to support, and you may make it attach at least one of the control boards of the substrate group of the above 1st.

[0025] According to this, the space where the rear-face side of the game board was restricted is effectively utilizable. Moreover, when attaching a sound control board as mentioned above as the above-mentioned control board, distance with the loudspeaker formed a little in many cases below from a center section in a game machine rear face can usually become near, wiring distance can be shortened, and reliability etc. can be raised.

[0026] Moreover, you may make it attach the above-mentioned ornament control board and the above-mentioned sound control board in the rear face or the upper surface of the above-mentioned display means attached so that it may be in the center of abbreviation of the above-mentioned game board and a front-face side may be attended. According to this, the space where the rear-face side of the game board was restricted can be utilized much more effectively.

[0027]

[Embodiments of the Invention] Below, an example of the operation form of the game machine concerning this invention is explained with reference to a drawing.

[0028] Drawing 1 is drawing showing the back mechanism of a pachinko game machine. In drawing 1, 1 is a game machine called the so-called CR machine, and the card-system ball rental machine (only henceforth a ball rental machine) 2 is put side by side in the right-hand of the game machine 1 on drawing.

[0029] In drawing 1, the back mechanism in the pachinko game machine 1 A reservoir tank 101, TWY 102, a terminal substrate (Upper tank) 103, the odd sensor unit 104, the discharge unit 105, the main substrate (game control board) Ba1, the emission-control substrate Ba2, the power supply substrate (current supply unit) Ba3, the discharge control board Ba4, the ornament control board Bb1, the display-control substrate Bb2, the voice-control substrate Bb3, (External terminal substrate) It consists of composition members, such as the frame 112 (back mechanism base) of the discharge unit 109, the card unit connection substrate 110, and the back mechanism board.

[0030] Here, the ornament control board Bb1, the display-control substrate Bb2, and the voice-control substrate Bb3 are 1st substrate group (Bb) attached in the rear face of the game board, and are exchanged for a new thing with the game board at

the time of exchange of the game board.

[0031] In addition, with this operation form, the display-control substrate Bb2 has the composition that it is prepared in the background of the adjustable display attached in the game board (it does not appear in drawing 1 ), and the ornament control board Bb1 is formed by lapping on it.

[0032] Moreover, the game control board Ba1, the emission-control substrate Ba2, the power supply substrate Ba3, and the discharge control board Ba4 are 2nd substrate group (Ba) attached in a frame 112, are left behind to a frame 112 as it is at the time of exchange of the game board, and are utilized in the replaced new game board. However, the main substrate (game control board) Ba1 is attached in a frame 112 from the convenience of the attachment in a game store so that it may mention later.

[0033] Moreover, the control board group Ba and the control board group Bb are combined, and it consists of these operation forms so that control of the game machine 1 at large may be managed by a total of seven control boards (Ba1-Ba4, Bb1-Bb3). Each of these control boards (Ba1-Ba4, Bb1-Bb3) are constituted as an individual control board based on the contents of control, or a function. Thus, when failure and fault are produced in a control system by having prepared the control board independently in the contents exception of control, or the functional order, it only comes to be sufficient to exchange only the control board which manages the corresponding function. That is, although the expensive main substrate which serves as much functions needed to be exchanged the whole round head when abnormalities were produced, for example in a display control or ornament control, and it was the former, what is necessary is to exchange only the display-control substrate Bb2 or the ornament control board Bb1 according to this operation form, and the cost concerning repair or a maintenance can be reduced. Moreover, only the comparatively few control board of the part mark which failure produced is exchangeable, and since the situation where the whole must be discarded for reasons of a part of failures about the multirole main substrate no abnormalities are [ substrate ] in a large majority of parts like before is avoidable, it can respond also to the request of society that he wants to reduce the industrial waste of these days.

[0034] A frame 112 is formed from the one cast made of synthetic resin, and is attached in the metal frame 121 fixed to the background of the front frame of the game machine 1. And the above-mentioned control board group Ba (the main substrate (game control board) Ba1, the emission-control substrate Ba2, the power supply substrate (current supply unit) Ba3, discharge control board Ba4), the reservoir tank 101, TWY 102, the terminal substrate 103, the odd sensor unit 104, the discharge unit 105, the discharge unit 109, the card unit connection substrate 110, etc. are attached by fasteners, such as an attachment component of one-touch, on this frame 112, and the so-called back mechanism board M is

[0035] As for the metal frame 121, the game board stowage 122 which carries out receipt fixation removable is formed [ board / game / nothing and ] in the shape of a

rectangle. Two or more game board adjustment catches which carried out the illustration ellipsis are arranged in the game board stowage 122, and the game board is fixed by two or more of those game board adjustment catches.

[0036] The reservoir tank 101 stores the sphere before being discharged beforehand, shortage of the number of spheres of this reservoir tank 101 is detected by the supply sensor (illustration ellipsis), and when insufficient, a sphere is supplied from an island facility. The sphere in the reservoir tank 101 is guided by TWY 102, and is discharged by the eccrisis unit 105.

[0037] the eccrisis unit 105 has the function which carries out required-number eccrisis (eccrisis here -- awarded-balls eccrisis -- and ball rental is carried out and eccrisis is included) of the game sphere guided from the reservoir tank 101 based on a predetermined sphere eccrisis command signal (signal from the emission-control substrate Ba2) to a game person side, and constitutes the exhaust equipped with the sphere eccrisis mechanism. In addition, the eccrisis unit 105 has the sphere eccrisis path (illustration ellipsis) in Nijo, carries out ball rental to the eccrisis for awarded balls, and serves as eccrisis of business. Moreover, the eccrisis for awarded balls is equivalent to supplying the game value generated in the game to a game person.

[0038] It is detected [ awarded-balls eccrisis and ] by the odd sensor unit 104 on TWY 102, respectively whether ball rental is carried out and there is any sphere for eccrisis. The terminal substrate 103 performs relay about the input of an AC power, transfer of the signal between the hole computers (management equipment : illustration ellipsis) of a game store, etc., and is classified into the relay section and the connector area (connection with a hole computer is made), and both are connected by the cable.

[0039] Here, the main substrate (game control board) Ba1 belongs to the control board group Ba attached in a frame 112, performs various control required for the accessory game performed by the game board, is contained in the predetermined transparent case 10, and constitutes the game control unit. The connection terminal block C1 which performs I/O of data or a signal is formed in the game control board Ba1, and when the game control board Ba1 is attached in a frame 112, the connection terminal block C1 is formed so that it may be located in the right end side of the drawing top game control board Ba1. Thereby, based on physical relationship with the connection terminal block (below-mentioned C2-below-mentioned C4) of other devices, the length of the cable at the time of connecting (illustration ellipsis) can be shortened.

[0040] By the way, having considered as the composition which attaches this main substrate (game control board) Ba1 in a frame 112 is based on a request that it enables it to want to be able to perform attachment of the game control board Ba1 easily in a game store.

[0041] Since the contents of control differ for every game board, if the game control board Ba1 is exchanged in the game board, being changed for a new thing is common.

Therefore, it was more convenient for there to be no reason for positive which it should dare attach in a frame 1, and for it to be attached on the contrary in a game board side, and to have enabled it to exchange the whole game board.

[0042] As stated also in advance, however, the game control board Ba1 In order for there to be a problem of being easy to receive unjust machining by the third person with malice etc. since drive control of various game equipments, such as change winning-a-prize equipment which has relation important for acquisition of game value, etc. is managed and to prevent the malfeasance It considers as the state where the game control board Ba1 is not attached in the game board 1 when shipping the game board 1 from a manufacture maker. the game control board Ba1 which was kept severely [ the game board 1 ] by another root, and was conveyed after the game board 1 engaged with the frame 112 in the game store -- a game store -- setting -- \*\*\*\*\* -- the inaccurate preventive measures of making it like are proposed In order to realize this proposal, the salesclerk of a game store etc. is wanted to consider the game control board Ba1 sent by separate post in a game store as the composition in which it is attached easily. Since it corresponds to this, with this operation gestalt, the attachment space of the game control board Ba1 is secured in the predetermined position by the side of the upper left of a frame 112, and it is considering as the composition which can attach the game control board Ba1 in the position simple by fasteners, such as an attachment component of one-touch. Therefore, when the inaccurate preventive measures of sending the game control board Ba1 by separate post with the game board as mentioned above are adopted, it can conform.

[0043] The emission-control substrate Ba2 belongs to the control board group Ba, is attached in a frame 112, controls various electrical parts (for example, electric driving source of the eccrisis unit 105) required for eccrisis of a sphere, is contained in the transparent predetermined case 11, and constitutes emission-control equipment. In addition, the connection terminal block C2 which performs I/O of data or a signal is formed in the emission-control substrate Ba2, and when the emission-control substrate Ba1 is attached in a frame 112, the connection terminal block C2 is formed so that it may be located in the upper-limit side of the drawing top emission-control substrate Ba2. Thereby, based on physical relationship with the connection terminal block (C1, C3, C4) of other devices, the length of the cable at the time of connecting (illustration ellipsis) can be shortened.

[0044] Based on the awarded-balls data (the number information of awarded balls) Transmitted from the game control board Ba1, this emission-control substrate Ba2 controls energization of eccrisis SORENOIDOHE based on the detecting signal from an eccrisis sensor, and performs control which makes the game sphere of a predetermined number discharge. Moreover, the emission-control substrate Ba2 performs control in accordance with carrying out ball rental, delivering and receiving a signal between the ball rental machines 2 (the so-called CR sand unit). that is, the ball rental machine 2 was included by receiving the BRDY signal (referring to drawing

2 ) which carries out ball rental from the ball rental machine 2, and shows a preparation completion by the emission-control substrate Ba2 by the side of the pachinko game machine 1, and receiving the PRDY signal (referring to drawing 2 ) which shows the preparation completion by the side of the pachinko game machine 1 by the ball rental machine 2 side — ball rental is carried out and control becomes possible. Moreover, the BRQ signal (refer to drawing 2 ) which requires that a sphere should be lent out is transmitted to the emission-control substrate Ba2 from the ball rental machine 2, ejection of a sphere on hire is performed by the emission-control substrate Ba2 based on reception of the signal, based on ejection of a sphere on hire having been completed, by transmitting an EXS signal (referring to drawing 2 ) to the ball rental machine 2 side, a series carries out ball rental and control becomes possible.

[0045] The power supply substrate (current supply unit) Ba3 belongs to the control board group Ba, is attached in a frame 112, and supplies power to each control board of the control board group Ba (the main substrate (game control board) Ba1, the emission-control substrate Ba2, discharge control board Ba4) and the control board group Bb (the ornament control board Bb1, the display-control substrate Bb2, voice-control substrate Bb3). Here, the detail of the supply system of power is explained with reference to the block diagram showing the electric power supply system of drawing 2 .

[0046] In drawing 2 , the power of AC24V is supplied from the exterior at the pachinko game machine 1, and AC24V which are an external power are indirectly distributed to the power supply substrate (current supply unit) Ba3 through the terminal substrate (external terminal) 103.

[0047] The power supply substrate Ba3 changes AC24V into a direct current, generates various kinds of DC voltage, and supplies it to each control unit. Specifically, while generating DC12V for DC30V for a solenoid drive, DC24V for a lamp drive, the object for a sensor drive, and a back light drive as a power supply for a drive, DC12V are generated as a power supply for control boards for operating each control unit.

[0048] DC30V and DC12V — the discharge control board Ba4 — DC24V and DC12V — the emission-control substrate Ba2 — DC32V, DC24V, and DC12V — the game control board Ba1 — DC12 — DC30V, DC24V, and DC12V are supplied to the ornament control board Bb1, and DC12V are supplied for V to the display-control substrate Bb2 at the sound control board Bb3 [ and ] Therefore, while the game control board Ba1 and the emission-control substrate Ba2 have composition supplied from the power supply substrate Ba3 constituted separately in the power supply for using it within these equipments, the power supply substrate Ba3 has composition which generates necessary voltage in response to supply of power (AC24V) from the exterior of the pachinko game machine 1, and is supplied to the emission-control substrate Ba2.

[0049] The discharge control board Ba4 belongs to the control board group Ba, is



attached in a frame 112, controls various electrical parts (for example, electric driving source of the discharge unit 109) required for discharge of a sphere, is contained in the transparent predetermined case 13, and constitutes the discharge control unit. The discharge control board Ba4 controls the discharge unit 109 (launcher) according to the amount of rotation of a discharge operating knob, and performs control which fires a game sphere by the strength according to the amount of rotation.

[0050] The ornament control board Bb1 belongs to the control board group Bb attached in the rear face of the game board, and is prepared in the background of the below-mentioned display-control substrate Bb2 in piles. This ornament control board Bb1 controls the operation (lighting or putting out lights) of the lamps for an ornament arranged in the front face of the game machine 1 etc., is contained in the transparent predetermined case 14, and constitutes the ornament control unit. The ornament control board Bb1 supplies the power supply to these luminescence ornament members while controlling luminescence of a side lamp etc. based on the ornament data transmitted from the game control board Ba1. In addition, the connection terminal block C3 which performs I/O of data or a signal is formed in the ornament control board Bb1, and when the ornament control board Bb1 is attached in the rear-face side of the game board, the connection terminal block C3 is formed so that it may be located in the soffit side of the ornament-on drawing control board Bb1. Thereby, based on physical relationship with the connection terminal block (C1, C2, C4) of other devices, the length of the cable at the time of connecting (illustration abbreviation) can be shortened.

[0051] The display-control substrate Bb2 belongs to the control board group Bb, and is attached in the rear-face side (this operation gestalt specially rear-face side of pattern display) of the game board (since it is attached in addition after the above-mentioned ornament control board Bb1 has lapped on the display-control substrate Bb2, display-control substrate Bb2 the very thing does not appear on drawing 1 ). This display-control substrate Bb2 controls a pin center, large accessory according to the instructions outputted from the game control board Ba1, displays a predetermined picture on the display (for example, specially display of pattern display) of the front face of a pin center, large accessory, is contained in a transparent predetermined case (a drawing top does not appear), and constitutes the display controller.

[0052] The display-control substrate Bb2 supplies the power supply to pattern display specially while controlling the image display of pattern display specially based on the indicative data transmitted from the game control board Ba1.

[0053] The sound control board Bb3 belongs to the control board group Bb, and is attached in the rear-face side of the game board. This sound control board Bb3 performs control which outputs various sound effects suitably according to a game state, is contained in the predetermined transparent case 12, and constitutes the sound control unit from a loudspeaker arranged in the front face of the game

machine 1 etc. In addition, the cable splicing of the sound control board Bb3 is carried out to the game control board Ba1, and transfer of the signal which shows a game state is performed. The sound control board Bb3 is performing control about the sound effect of generating a sound effect based on the sound data transmitted from the game control board Ba1. Moreover, the connection terminal block C4 which performs I/O of data or a signal is formed in the sound control board Bb3, and when the sound control board Bb3 is attached in a frame 112, the connection terminal block C4 is formed so that it may be located in the lower left side of the drawing overtone control board Bb3. Thereby, based on physical relationship with the connection terminal block (C1-C3) of other devices, the length of the cable at the time of connecting (illustration ellipsis) can be shortened.

[0054] The discharge unit 109 is a mechanism for discharging a sphere according to operation of the discharge operating knob prepared in the front lower part of the game machine 1. The card unit connection substrate 110 is for connecting to the game machine 1 the cable (not shown) which extends from the ball rental machine 2, and is equipped with the carrying member (for example, scalpel type connector) which receives the connector prepared in the edge of a cable.

[0055] Since it was constituted so that control of the game machine 1 at large might be managed by a total of seven control boards (Ba1-Ba4, Bb1-Bb3) which were described above and with which the control unit combined the control board group Ba and the control board group Bb like according to this operation gestalt, when failure and fault are produced in a control system, what is necessary is to exchange only the control board which manages the corresponding function, and the cost concerning a maintenance can be reduced.

[0056] Moreover, only the control board which failure produced can be exchanged, the situation which must discard the whole for reasons of a part of failures about the multirole main substrate like before can be avoided, and it can respond also to the request of recycling-ized promotion of parts, and the cure against an environmental problem of wanting to reduce industrial waste.

[0057] Moreover, since the control unit is constituted from a control board (Ba1-Ba4, Bb1-Bb3) which achieved individual independence by the content of control, and the functional order, it is easy to grasp circuitry and the content of control, and has become, and in case it inspects by the game store or the specific inspection institute about each control board, the analysis etc. can be performed efficiently in a short time.

[0058] Moreover, each control board (especially the game control board Ba1, the emission-control substrate Ba2, the ornament control board Bb1, the voice-control substrate Bb3) the length of the distribution cable connected to the connection terminal block (C1-C4) prepared in each control board serves as the shortest — being suitable (attaching position) — for the \*\*\*\*\* reason attached On the whole, the length of a distribution cable can be shortened, while being able to use the wiring space in the limited space effectively, since the slack of a distribution cable

decreases, the probability that an open circuit will take place can be lowered and reliability can be raised.

[0059] Moreover, about the game control board Ba1, the attachment space of the game control board Ba1 is secured in the predetermined position by the side of the upper left of a frame 112, and since it was considering as the composition which can attach the game control board Ba1 in the position simple by fasteners, such as an attachment component of one-touch, when the inaccurate preventive measures of sending the game control board Ba1 by separate post with the game board are adopted, it can respond instantly.

[0060] In addition, with the above-mentioned operation gestalt, although it attached at the background of adjustable display and that case where the sound control board Bb3 was formed caudad was explained where the ornament control board Bb1 is piled up on the display-control substrate Bb2, the method of attachment of the display-control substrate Bb2, the ornament control board Bb1, and sound control board Bb3 grade is not limited to this.

[0061] Here, with reference to drawing 3 and drawing 4, other examples of attachment of the display-control substrate Bb2, the ornament control board Bb1, and sound control board Bb3 grade are explained.

[0062] The decomposition perspective diagram of the tooth back of the game board shown in drawing 3 attaches the ornament control board Bb1 and the sound control board Bb3 in rear-face 201a of the adjustable display 201 attached in the tooth back of the game board Y through the attachment base 200 in the parallel state. According to this, the space where the game board Y was restricted can be utilized more effectively.

[0063] Moreover, as shown in the perspective diagram of the tooth back of the game board of drawing 4 you may make it form the sound control board Bb3 in the rear face of the winning-a-prize game medium flare-part material (the so-called \*\*\*\*\*) 202 which makes it flow down the game medium which was formed in the rear-face [ of change winning-a-prize equipment (so-called attacker: — not shown) ], and rear-face side of the game board Y, and won a prize through engagement section 202a and a boss 203 (for example) piece of engagement 204a in which the sound control board Bb3 was formed at the edge of the wrap transparent case 204 was made to engage with engagement section 202a of \*\*\*\*\* 203, and it formed in it at the other end side of the transparent case 204 — screw stop \*\*\*\* is carried out and a screw stop is carried out to the above-mentioned boss 203. In this case, while the space where the game board Y was restricted is effectively utilizable, distance with the loudspeaker (not shown) formed in many cases a little caudad from the game board in the usual game machine can become near, wiring distance can be shortened, and reliability etc. can be raised.

[0064] In addition, the game machines applied in this operation gestalt may be other pinball machines, such as not only the pachinko game machine of the 2nd sort (the so-called wing object type) but a pachinko game machine of the 1st sort (the so-

called seven machine type) or the 3rd sort (the so-called right object type), an arrangement ball game machine, etc.

[0065] Moreover, although this operation gestalt explained the case where a control unit was constituted from seven control boards (Ba1-Ba4, Bb1-Bb3), of course based on the content of control, or a function, the number of control boards can be fluctuated suitably.

[0066]

[Effect of the Invention] When a predetermined winning-a-prize state occurs based on the game medium discharged by the game field established in the front-face side of the game board according to the game machine which was described above and which is applied to this invention like It is the game machine constituted so that profits might be given to a game person. The above-mentioned control unit Or it consists of two or more control boards individually formed for every function. every content of control -- each above-mentioned control board It is classified into the 1st substrate group attached in the rear face of the above-mentioned game board, and the 2nd substrate group attached in the rear-face side of the frame with which this game board is engaged removable. While the substrate to which the substrate which performs control relevant to the game board in principle performs control relevant to back mechanisms other than the game board at the rear face of the game board again is arranged at the rear face of a frame Since the substrate which controls the content of a game among the control boards relevant to the game board was arranged as an exception at the frame background, when failure and fault are produced in a control system the corresponding content of control -- or it is effective in the ability to reduce the cost concerning repair in order for what is necessary to be to exchange only the control board equivalent to a function Moreover, since it is utilizable as it is, the control board which is operating normally is effective in the ability to contribute to the cure against an environmental problem in that excessive industrial waste is not taken out:

[0067] Moreover, the above-mentioned control board the display-control substrate which supplies power to this display means while controlling a display means, and an ornament, while controlling luminescence of a member While controlling in generalization the content of a game of the ornament control board which supplies power to this ornament means, the sound control board which controls a sound output means, and various game equipments It consists of power supply substrates which supply power to the game control board which supplies power to various driving member, the emission-control substrate which controls the eccrisis means of the game medium which discharges the game medium as a dividend to winning a prize, the discharge control board which controls the discharge means of a game medium, the various aforementioned game equipments, and each aforementioned substrate. The 1st substrate group attached in the rear face of the above-mentioned game board The 2nd substrate group which is the above-mentioned display-control substrate, the above-mentioned ornament control board, and the

above-mentioned sound control board, and is attached in the rear-face side of the above-mentioned frame. It is effective in the ability to aim at the increase in efficiency of exchange work of the game board, and promotion of recycling by considering as the above-mentioned game control board, the above-mentioned emission-control substrate, the above-mentioned discharge control board, and the above-mentioned power supply substrate.

[0068] The front frame of the shape of a frame which attaches the above-mentioned game board from back is prepared in the front-face side of the above-mentioned frame possible [ opening and closing ] through the rotation shaft prepared in an end side. moreover, the above-mentioned game control board is made it attached so that the connection terminal block which the rotation shaft side of the aforementioned front frame on a frame is the position of an opposite side, and is prepared in the above-mentioned game control board may be located inside the aforementioned frame. Since the angle which opens a front frame is small and ends in the state where the game machine was attached in the island facility, when the inaccurate preventive measures of sending a game control board by separate post, and attaching in a frame are adopted, it is effective in the ability to perform efficiently attachment of the game control board in a game store smoothly. Moreover, since the connection terminal block prepared in the above-mentioned game control board is located inside the aforementioned frame, distance with other control boards becomes comparatively near, and it is effective in the ability to shorten wiring distance and raise reliability etc.

[0069] Moreover, the rear face of the winning-a-prize game medium flare-part material which makes it flow down the game medium which was formed in the rear-face [ of the change winning-a-prize equipment attached so that it may be in the center of abbreviation of the above-mentioned game board and a front-face side may be attended ], and rear-face side of the above-mentioned game board, and won a prize is made to support. In attaching at least one of the control boards of the substrate group of the above 1st, it is effective in the space where the rear-face side of the game board was restricted being effectively utilizable.

[0070] Moreover, in attaching the above-mentioned ornament control board and the above-mentioned sound control board in the rear face or the upper surface of the above-mentioned display means attached so that it may be in the center of abbreviation of the above-mentioned game board and a front-face side may be attended, it is effective in the ability to utilize much more effectively the space where the rear-face side of the game board was restricted.

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[Translation done.]

\* NOTICES \*

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1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.\*\*\* shows the word which can not be translated.

3.In the drawings, any words are not translated.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the front view showing the composition of the back mechanism of the pachinko game machine as an operation gestalt of this invention.

[Drawing 2] It is the block diagram showing the electric power supply system of the control board of the pachinko game machine as an operation gestalt of this invention.

[Drawing 3] It is the decomposition perspective diagram showing the example of tooth-back composition of the game board.

[Drawing 4] It is the perspective diagram showing other examples of tooth-back composition of the game board.

[Drawing 5] It is the front view showing the composition of the back mechanism of the conventional pachinko game machine.

[Description of Notations]

1 Game Machine (Pachinko Game Machine)

2 Card-System Ball Rental Machine (CR Sand Unit)

Ba 2nd substrate group

Ba1 Main substrate (game control board)

Ba2 Emission-control substrate

Ba3 Power supply substrate (power supply unit)

Ba4 Discharge control board

Bb 1st substrate group

Bb1 Ornament control board

Bb2 Display-control substrate

Bb3 Voice-control substrate

C1-C4 Connection terminal block

M Back mechanism board

109 Discharge Unit

112 Frame

121 Metal Frame

122 Game Board Stowage

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[Translation done.]

## \* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.\*\*\* shows the word which can not be translated.

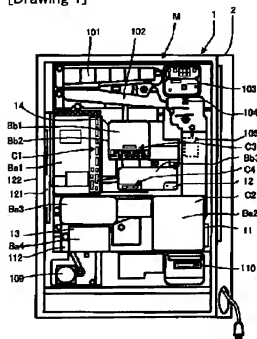
3.In the drawings, any words are not translated.

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DRAWINGS

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[Drawing 1]

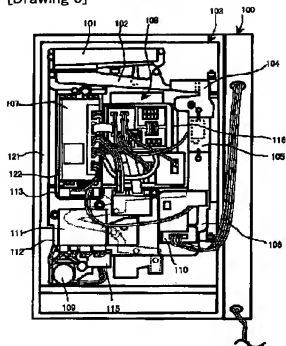


[Drawing 2]





[Drawing 5]



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[Translation done.]